REMARKS/ARGUMENTS

The specification and claims have been carefully reviewed in the light of the Office Action to which this amendment is responsive. By this amendment, independent claims 15 and 28 have been canceled without prejudice and in substitution therefore, new claims 29-38 are submitted, which together with the remaining dependent claims, are believed to have improved form and distinguish even more clearly over the prior art.

Claims 15, 17-23 and 26 have been rejected as being anticipated by Wunning (5,154,599); claims 15, 18-23 and 26 have been rejected as being anticipated by Domschke et al. (6,234,092); claims 15, 18-22 and 24-28 have been rejected as being anticipated by Seymour (5,727,378); claims 15, 17-22, and 25-27 have been rejected as being anticipated by EP 0698764; claims 15, 22-25, 27 and 28 have been rejected as being anticipated by Kydd (3,309,866) claims 16 and 17 have been rejected as being obvious over Wunning (5,154,599); and claim 28 has been rejected as being obvious over any of Domschke et al., Wunning, EP 0698764 in view of either Kydd or WO 01/11215. Reconsideration of such rejections is respectfully requested in the light of the foregoing amendments.

Applicant's invention relates to a gas turbine having a combustion chamber adapted for creating a large fuel air swirl pattern necessary for establishing and maintaining flameless oxidation. The combustion chamber is designed for more efficient operation with a very low pressure drop or losses across the chamber, important in powering the gas driven turbines. The combustion chamber has a plurality of inlets for directing air and/or fuel into the combustion chamber and an axially disposed outlet for directing exhaust gases to the turbine. According to an important aspect of the invention, the inlets direct fuel and/or air into the chamber in substantially parallel relation to a longitudinal axis of the combustion chamber and are disposed on radii with respect to the longitudinal axis which is greater than the radius of the exhaust gas outlet. As set forth in the specification, the resulting recirculating fuel air in the reaction space effects efficient and complete flameless oxidation without a substantial pressure drop between the inlets and outlet. In the illustrated embodiment, a plurality of air inlets are disposed in a circular array having a diameter substantially greater than the diameter of the exhaust gas outlet and a fuel feed device directs fuel into and through the air inlets.

In contrast, Wunning ('599) does not relate to a combustion chamber for gas turbines, and hence, does not concern with the problem minimizing pressure drops between inlet and exhaust sides of the combustion chamber. Moreover, the reference lacks any suggestion of the important relationships of the gas inlets and outlets of the combustion chamber according

to the present invention. Indeed, the outlet in Wunning '599 is located radially outwardly of the fuel and air inlets.

Domschke et al. ('092) relates to a chemical reactor, rather than a gas turbine or a combustion chamber for powering a gas turbine. Domschke et al. again is not concerned with minimizing pressure drops across the combustion chamber, nor does it have any appreciation for the important relationships between the gas inlets and outlet of the combustion chamber. Indeed, Domschke et al. does not even show a gas outlet.

Seymour '378 also lacks any appreciation of the features of the present invention. It discloses a combustion chamber comprising a linear passage 124 which can be considered as defining an air inlet. It receives air in an axial direction. Fuel is delivered by an atomizing button 96 which directs a spray of fuel ain a radial direction. The fuel and air are not fed into the chamber in parallel relation to each other, or in the same direction. Instead fuel is blown radially inwardly and air enters the chamber in an axial direction. Nor is the diameter defined by an array of fuel nozzles greater than the diameter defined by the outlet. To the contrary, the diameter of the outlet appears to be defined by the inner circumference of the wall 52, which is larger than the diameter defined by the fuel inlet buttons 96. As a person skilled in the art would understand, the combustion chamber also would not be adapted to produce flameless oxidation. The numerous small swirls generated by the flow stream creates flames which vary from rich to lean in the right to left direction in Fig. 1.

Kydd ('866) also does not anticipate or suggest the features of the present invention. The gas turbine in Kydd receives an air/fuel mixture from a carburetor. The air/fuel mixture enters the combustion chamber in a radial direction and leaves in a radial direction. There is no disclosure of fuel/air inlets defining an inlet diameter larger than the diameter of the exhaust outlet.

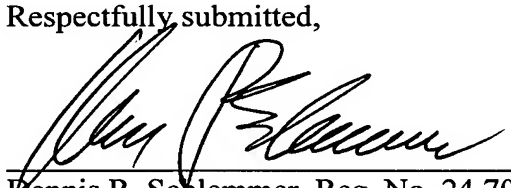
WO 01/11215 A1 discloses a flameless gas turbine combustion chamber in which, as depicted in Fig. 3B, air is introduced in an axial direction (Reference No. 128) and fuel is introduced in a radial direction (Reference No. 138). There again is no suggestion of introducing fuel and air into the combustion chamber in parallel relation to a longitudinal axis of the combustion chamber. Moreover, vortices 5 are necessary within the chamber, which increases the pressure drop.

Wunning EP '764 discloses a chamber for flameless oxidation similar to that disclosed in Wunning '599. Again, there is no disclosure or suggestion of the invented

design wherein the gas inlets define a diameter which is larger than the diameter of the exhaust outlet.

Moreover, there is no suggestion or impetus in the prior art which would lead a person skilled in the art to pick and choose features of the various prior art documents that would lead to the present invention. Hence, the claims as now presented all are believed to patentably distinguish over the prior art. Accordingly favorable action is respectfully requested.

Respectfully submitted,



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Date: October 4, 2005

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Amendment or ROA - Regular (Revised 2005 09 01)